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Nonstandard regular variation of in-degree and out-degree
in the preferential attachment model

For the directed edge preferential attachment network growth model studied by Bollobas et al. (2003) and Krapivsky and Redner(2001), we prove that the joint distribution of in-degree and out-degree has jointly regularly varying tails. Typically the marginal tails of the in-degree distribution and the out-degree distribution have different regular variation indices and so the joint regular variation is non-standard. Only marginal regular variation has been previously established for this distribution in the cases where the marginal tail indices are different.